

L. A. OFFE

ENDERBY

0031

LAND. I

(ANTARCTICA)

BMR

75/76

INDEX

Page

Subject

Contents

Mawson

Law Island

Rippon Depot ✓

Mt Breckinridge ✓

Mt Christensen

Pt Widdows

Fyfe hills ✓

Nth of Observ = Island

Sheelagh Island ✓

Latham Peak ✓

Pinn Island ✓

Krasin Ntk ✓

~~Makood Ntk~~

~~Sandwich~~

Gravity - read lhs of mark on 32

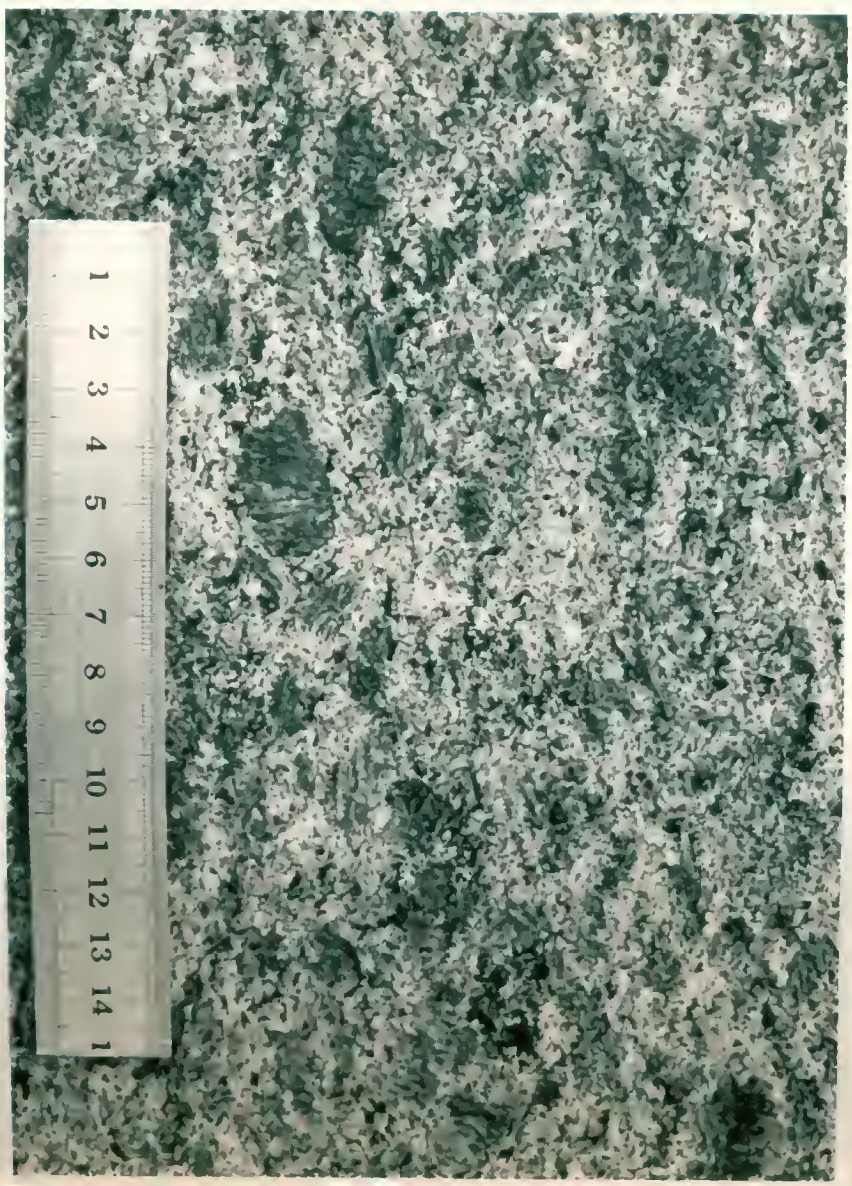
Mawson

27/12/75

Host rock - Hagen gneiss.
- feldspars (grey translucent colour) to 7cm length in
fine grained f-q - Biot matrix.
Major part of matrix also
appears to be pyroxene?
Includes xenoliths of folded
gneiss. Some intrusive
contacts into xenolith seen.
(photograph). Xenolith
~ 3 metres long (slope
away from coast behind
helipad) of phlogopite -
feldspar - sapphirine rock
and feldspar rock.
Crosscutting veins of
f - biotite - commonly
garnet concentrated near
these veins. Cut by
mylonite veins (mylonitized
gneiss).

* SPE 1 - xenolith - px bands
 * 2 - drav. augen green
 * 76283103 - enstatite -
 sapphirine - phlog
 xenolith

GB/1045



GB / 1034



GB/1047



29/12/75

Law Island

Law
Is } 0

N
↑
E

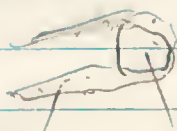
(Fold
Is

Malachite staining joint
and fracture faces of
gnt. biot gneiss - layered.
Very quick look at outcrop
(5 minutes)

* SPEC 4.

Along coast - indications
that wind to west. Snow
dunes indicate two
directions.

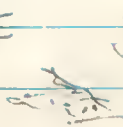
sea, ice



snow
drift

iceberg

N
↑
W — E
S



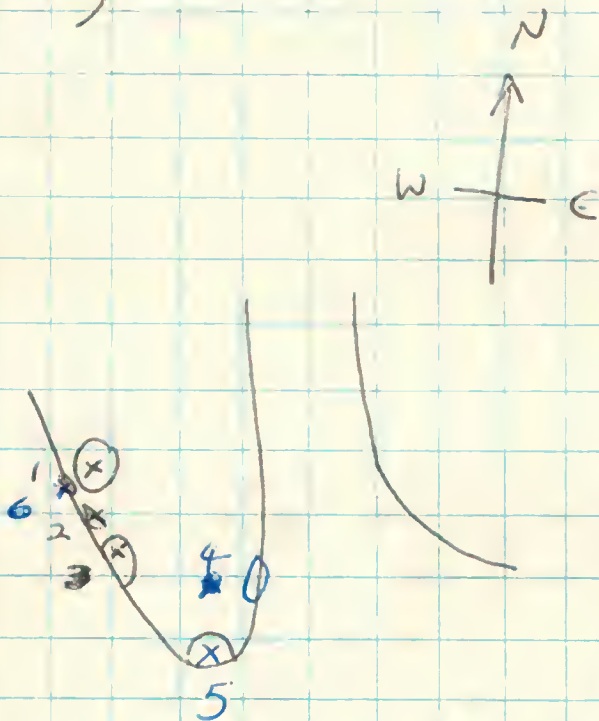
↑

coast

5

CAPE DAVIES * RAYNER PK/28/034 B2W
Rippon Depot. 21/12/75 1959

Readings true - (compass
~~set 56°~~ readings reduced
by 56°)



1. Fine - med grnd px - q. f. gneiss
- small black grains probably
px. Intrusive contacts
with xenoliths of basic
rock - px - plagi (red biot)
Two dolerite dykes cut the
above. One up to 50 cm wide.
Sharp contact.

peg (q.f) veins parallel and
cut the xenoliths and country
rock. Cut by dol dykes through

GB/1021



q-f

px
-plag

Intimate relationship of country
rock with mafic xenoliths

GB/1020



GB/1027



Folded xenolith: Country
rock probably also folded

GB/1022



Pods rich in px (hyp - coarse grained)
in the basic xenoliths

GB / 1024



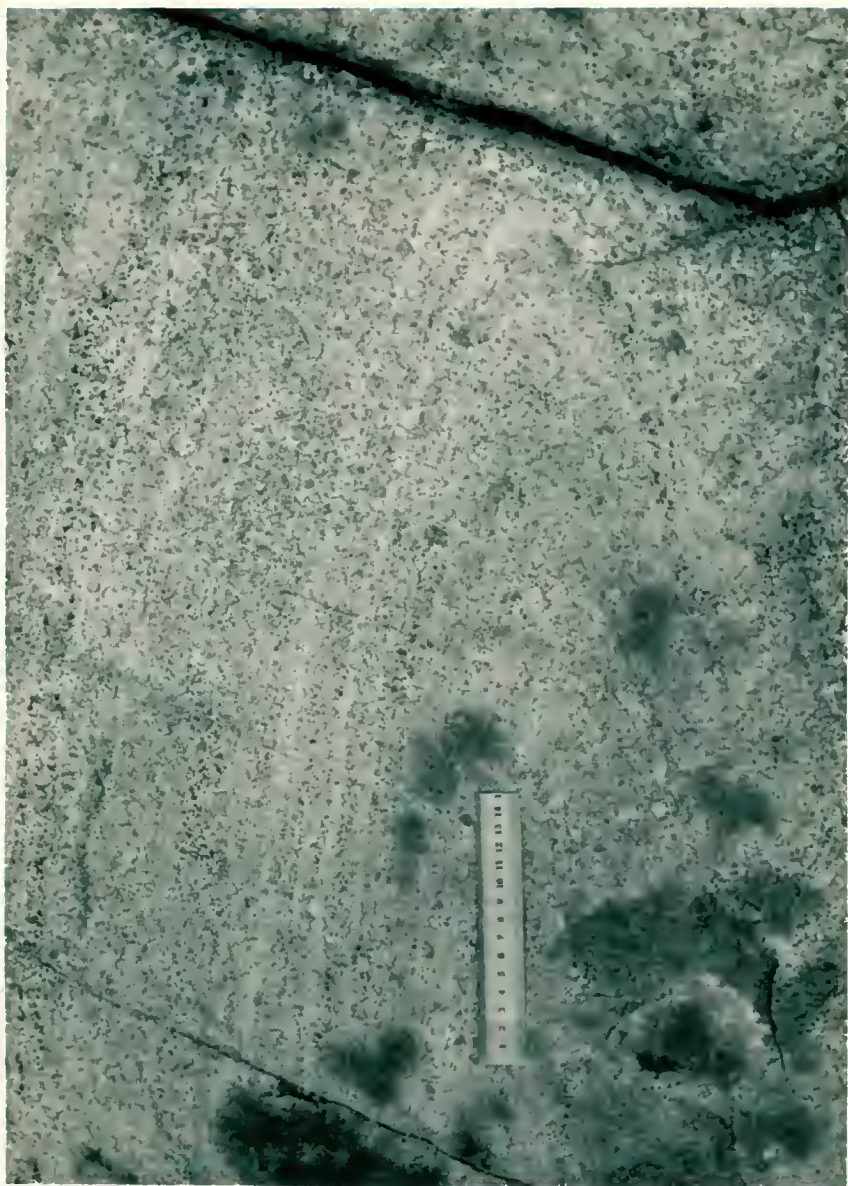
History: Charnokite intrusive
into basic rock. Some
mixing of the two? Late
veining of peg veins. Folded?
Intruded by dykes
Foliation appears to be defined
by grainosity - g - f (coarser
grained) layering & f (finer
grained) layering & also
elongated xenoliths

30/4/76

How about sequence of
basic & 'tuffaceous' rocks
- lightly folded - high grade
met with partial molting
of g & f - kink (cren)
folding at this time.

From this fold it appears
that the g-f "magnetite"
same age or later than
folding.

GB/1023



- TS: pale green cpx, hypers.
(total px 57%), plag
(40%), op. (3%) minor
hornblende & quartz
- * SPEC 5 - dol
- * SPEC 6 - mafic xenolith
- TS

General Foln

S 294

D. over +

Tourmaline S 220

D 77W

Also xenoliths of b-g-f
Xenoliths // to foliation
and vary from several
cm lengths to 10's metre
layers

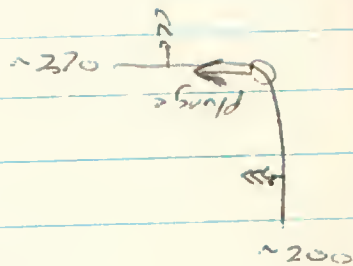
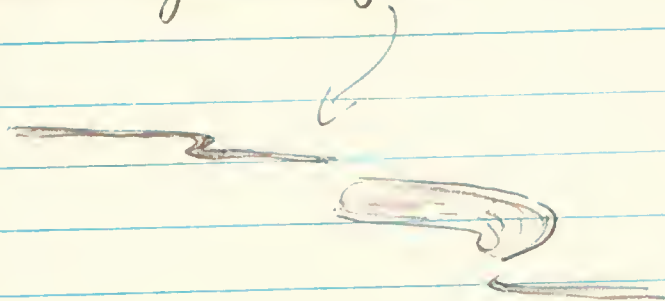
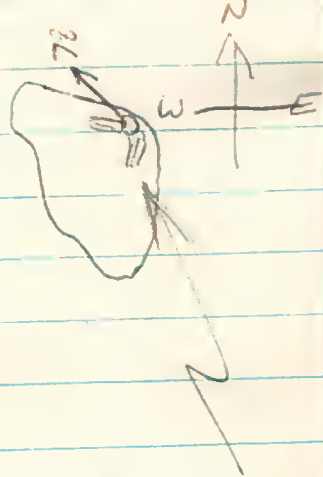
Thin section of 76283105 - metamorphosed
basalt dyke - pale green cpx + hyp
(57% total), plag (40%), opaque min
(3%), hornblende (minor) & ? quartz

Thin section 76283106 - hypersilane,
colourless cpx (total px 55%), pale
green omph (25%), plag (20%)
minor phlogopite and opaque grains
Faint grains, fmed. grained.

2.

Phge 78 $\rightarrow$ 304

Meso scale fold.

Granular g-f
gneiss with
thin fairly continuous
mafic layers.

2nd phase?

GB/1028



3. Charnakite - q-pr-f gneiss
granite. On southern side
of anticrop abundant mafic
layers. Interlayered with
charnockitic rock type.
Some coarse knobs
(4 cm across) of hypersthene
and lenses of black pyroxene.
The charnockite host rock
appears to be megacrystic
phase of a intermed
basic rock (total comp).
More mafic phase has
melted & recryst - partly
intruding the more basic
layers.

* SPEC 7 - charn.

TS = perthitic orth (68%), qtz (30%), hyp altg to opaque rct (28%), minor zircon & apatite

* SPEC 8 - mafic r.

TS = hyp (40%), green-brown hornblende = black pr (40%), plag (15%) minor phlog & opag - secondary? growth of hyp at boundary of horn/horn & horn/plag

* SPEC 9 - large hyp

TS = hyp (med-grind) along fractures hornbl. & biot - also a scuffed brown calcite

* SPEC 10 - layered

TS = hyp (50%) partly altered (opag + ?), plag (20%), horn (10%), q (10%), biot (10%)

Fol. S: 294

D: ~ vert

Some layers
displaced and fracture
filled with coarse
grit g-f

comp layering - 2-f.
comp layer

this is
larger than
main channel-like
melt, but
probably
last phase.

'Z' folds $\Phi_{\text{hyp}}: 82 \rightarrow 280$

GB/1025

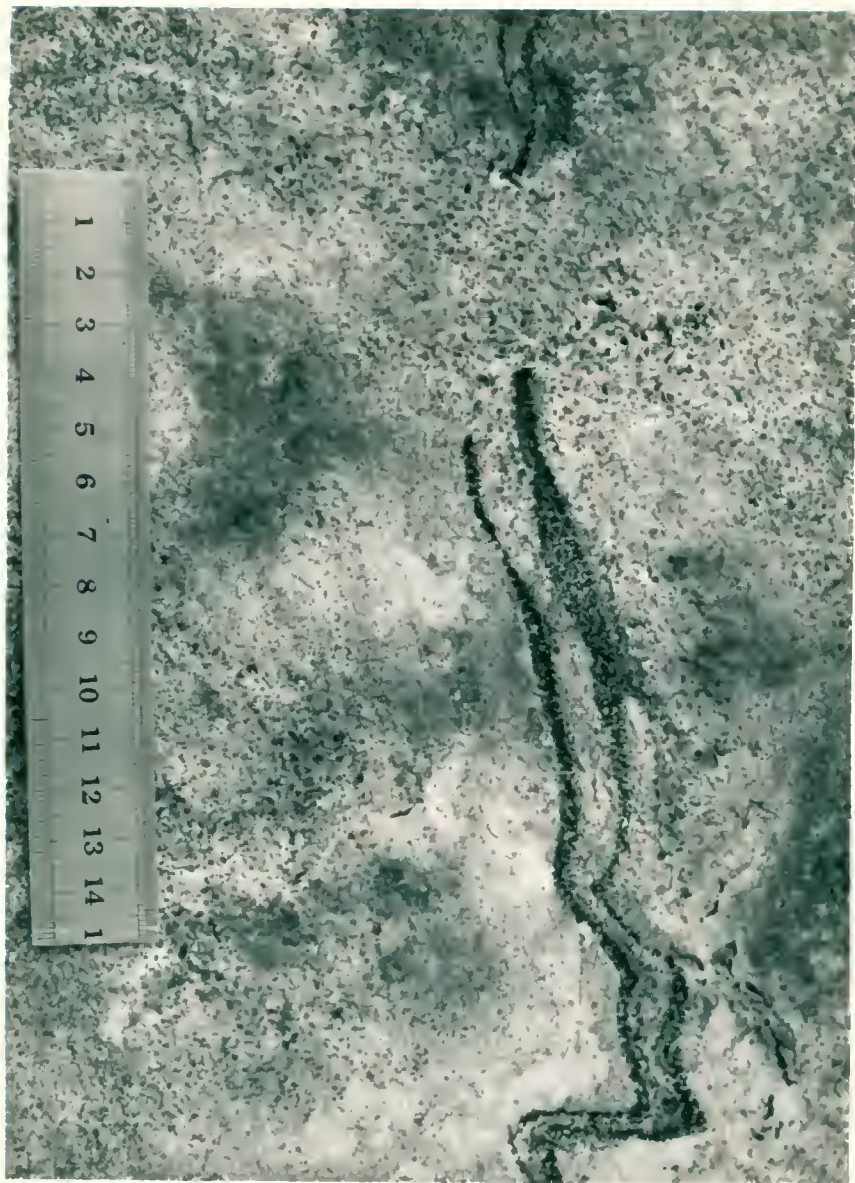


GB/1030

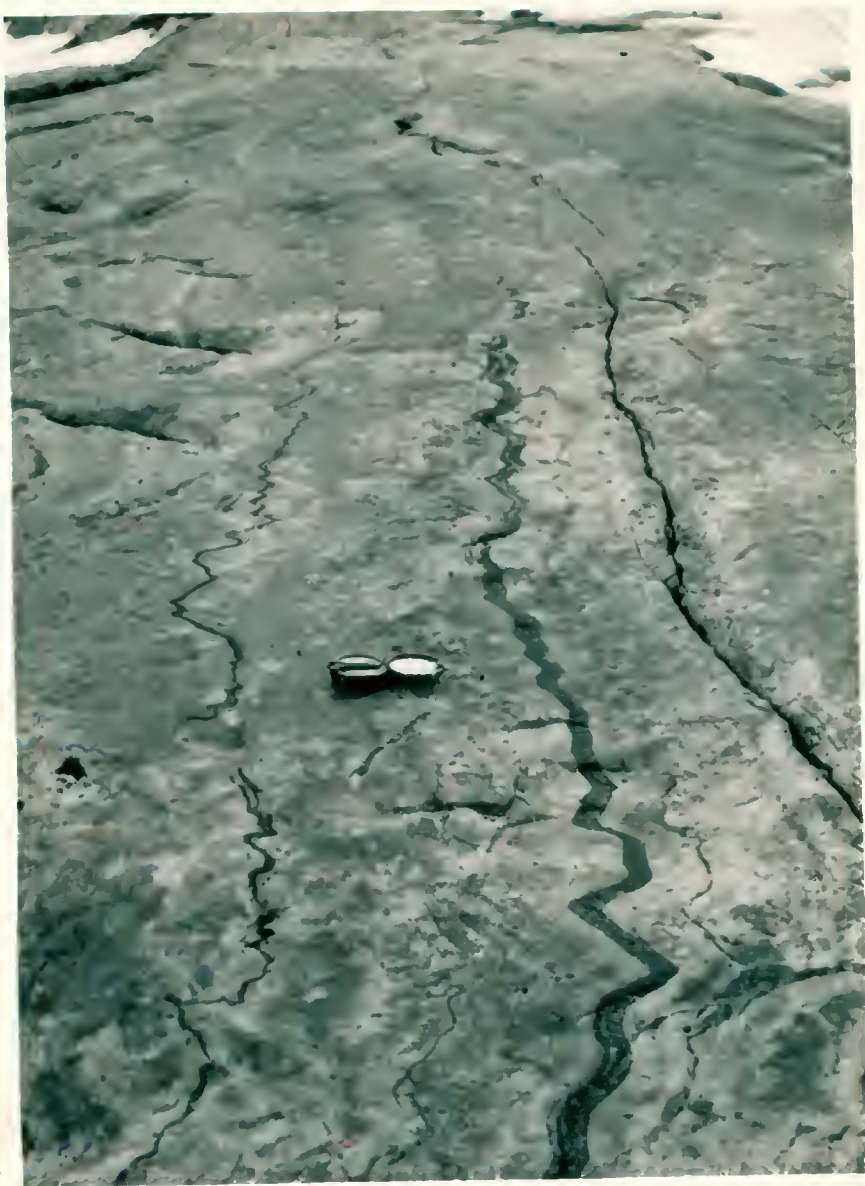


2
↑

GB/1029



GB/1026



4. Charnakite

5. Partly honeycomb
weathering of f. gnd
charnakite fol. S. 290
(p. - q. fld) D: 82N

Veins of q-f peg.
Layer of mafic rock // to fol.

At pt 1 again * SPEC 11

- basic layer (biot-plag-q-f)

Some pinch and swell structure
of the peg layers

TS - hyp (53%) plag (45%), biot (18), opaque (18)
minor hornblende.

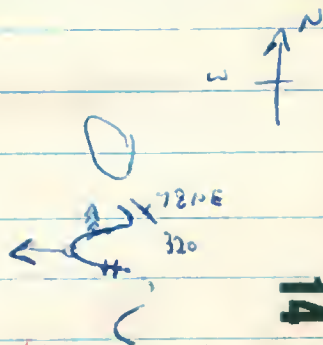
6. Mesoscale

Plg 78 → 280

fold

Layers consist
of p₂-fld-gnt,
p₂-biot-f-gnt,
q-f-p₂

* SPEC 12.



TS - layers biot, orthoc, plag; hyp, perth, antip; quartz.

Lineation Phyllon 66 → 354
defined by
long axis of biot & stibby px.
(ascribed plane to foliation)



px -

q.f.
string

field

GB/1046



GB/1043



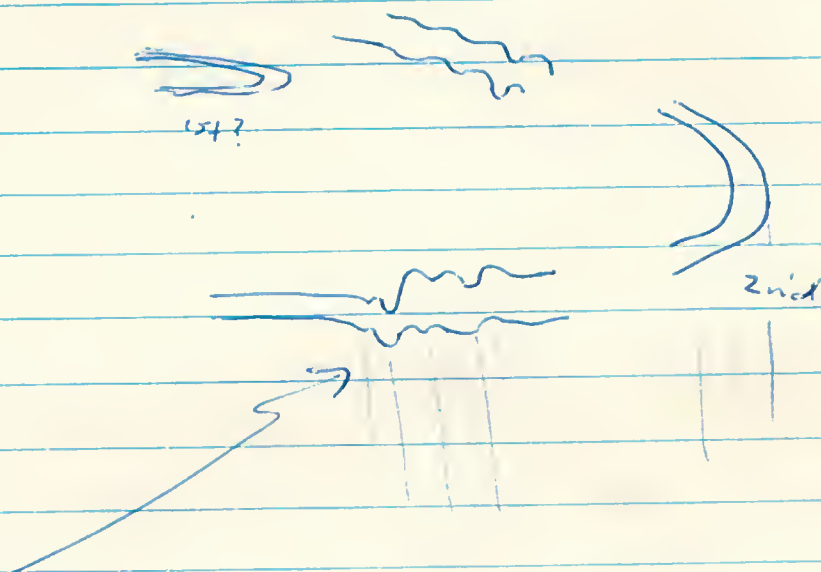
gnt
sp
b
f

q
f
px

gnt
px
f

px

Two phases of folding?
 - tight phase (see photo's)
 folded by open phase



parasitic to second phase?

2-f or f peg vein || foliation
 & in places cut fol. Folded
 by first fold phase but also cut
 1st fold phase Bloody Hell

* SPEC 13 at loc 3

- part of mafic band

TS- clinopy (90°) altering partly to brown hornblende,
 interstit. h₂O, plaq, crtz & opaque grains

MT Cod / 18 / 069 B&W 1/1/76

114 Beckenridge (1976) - 54 -)

Feb. 5. ²¹⁴~~208~~

1. Chanokite

D. 31 W

* SPEC 14

Feb

2. Chanokite

S. 189

* SPEC 15 A

D. 30 W

*

15 B - black opthalmic
fracture full (pseudotach?)

Tange Prom 12/1888

8/1/76

Mt Christensen

111

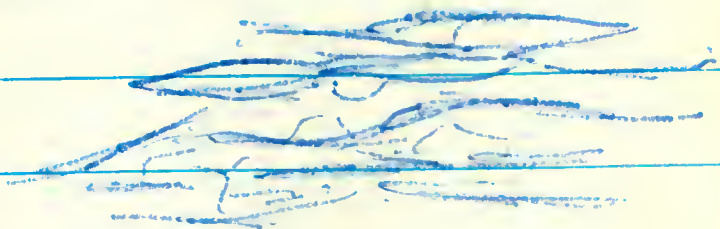
S. ~~111~~ - 51 = 060

1. Px-biot-q-f gneiss

D. 35SE

- medium grained

Lenses up to 1 cm^{width} of q-f separated
by mafic minerals



Close jointing

Scouty

S. 284 - 51 = 233

D. vert

Granite dyke cuts

gneiss (q-f-biot-tourm)

- centre of dyke

pegmatitic

Meso scale fold

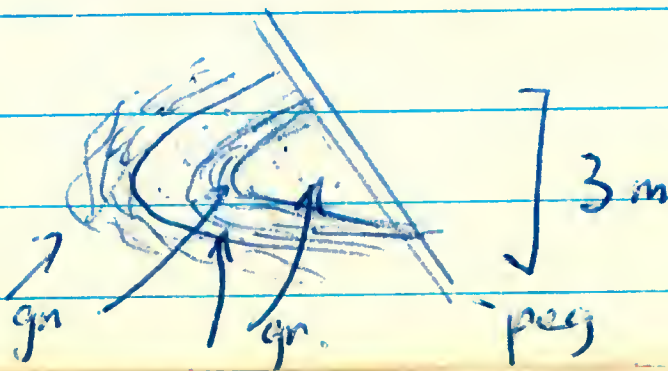
Phg fold

38 → 130 - 51 = 079

camp

Folding

granite
dyke



Two ages of gr. intrusion
- f-m grained biot (horn) gr
which is folded with the
gneiss (rem. canf contact
& the gneissosity of host rx)
& peg veins which cut
the folds & contain tourmaline
& minor euhedral magnetite
(octahedra)

Near large fold * SPEC 16

Between Nat Map site and camp
- peg vein * SPEC 17
- mag grain
& tourmaline

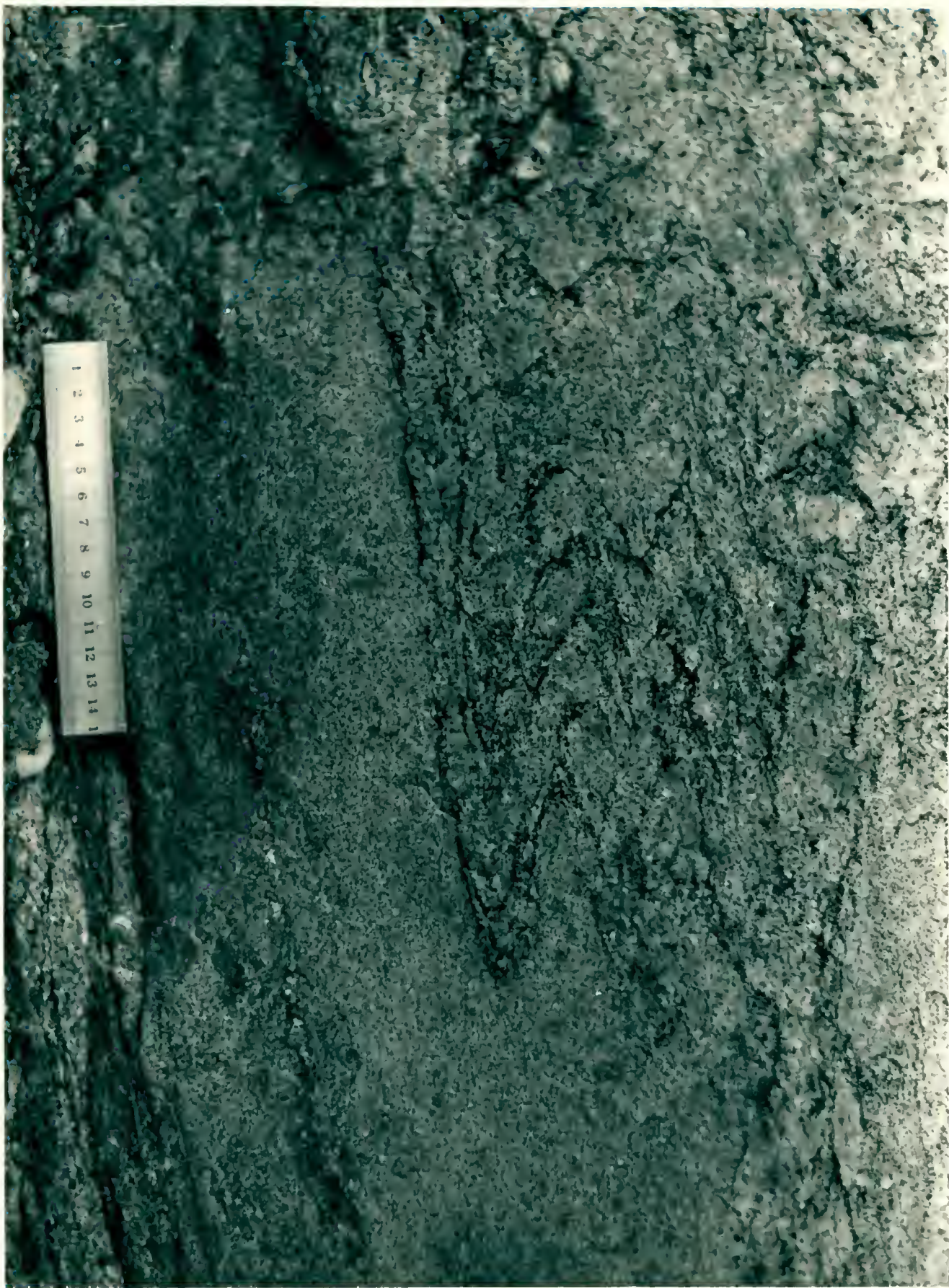
The host gneiss is fairly homogeneous
but includes zones rich in
mafic minerals. The gneiss
is intruded by the horn
bearing biot - gr (mainly
f-med grained) rem. canf
& both gneiss & gr are folded.
Cut by later granite veins.

M/2036



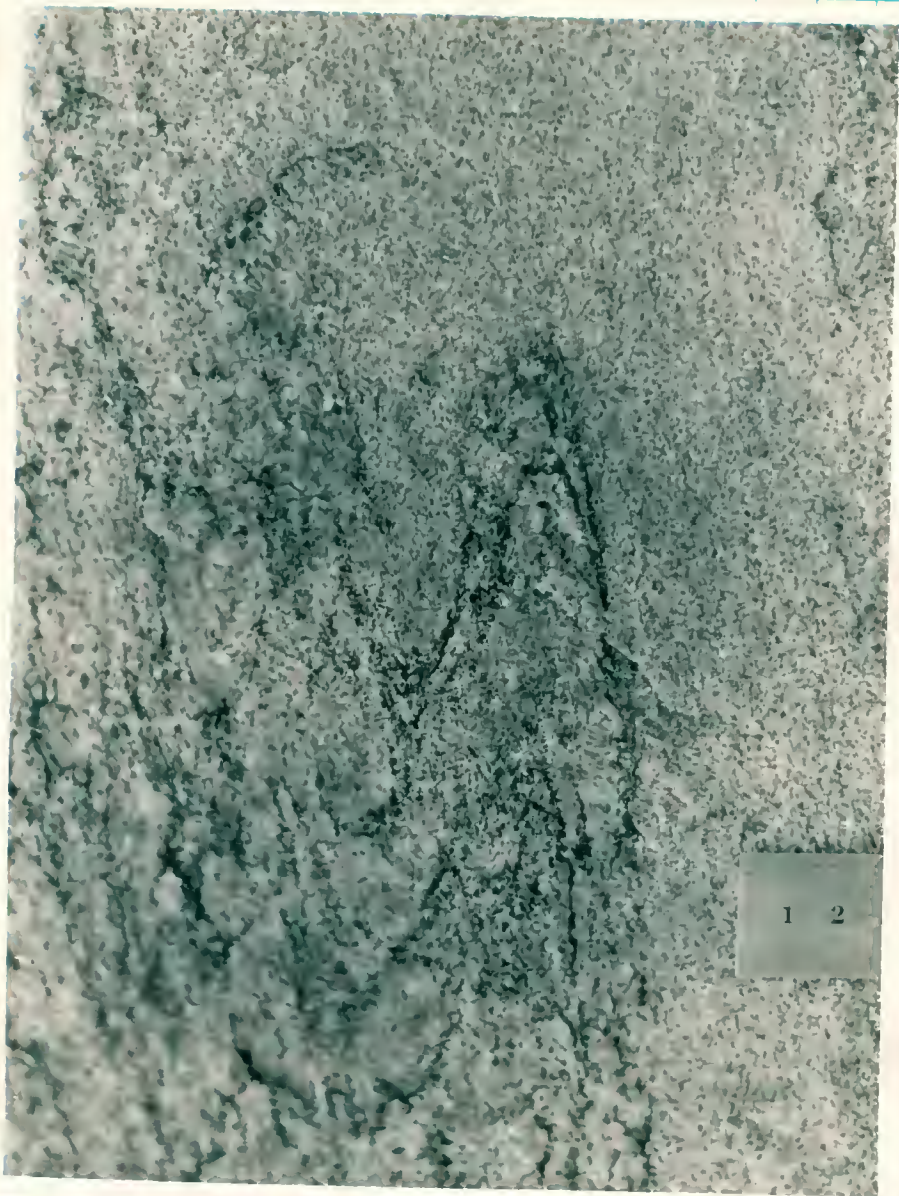


M/2036



M/2036

M/2036



S surface caused by folding
is not obvious

Pt Widdows

10/1/76

Gneissic granite - fairly
evengrained - b & f.
- foliated. Includes
xenoliths of f-grit
biot gneiss

Large amount of scree (foreign
but some bits similar to
the xenoliths)

- includes calc silicate
(diop - calcite - epidote
grt - q - f with pyrox)

* SPEC 19

and biot-grt-q-f gneiss

- some highly folded scree
- biotite gneiss with
conformable q. veins
- includes pyrox gneiss
- also possibly some

Cu carbonate staining on
fracture. * SPEC 18

M/2036





M/2036

Feb 5

gn granite

340-49-291

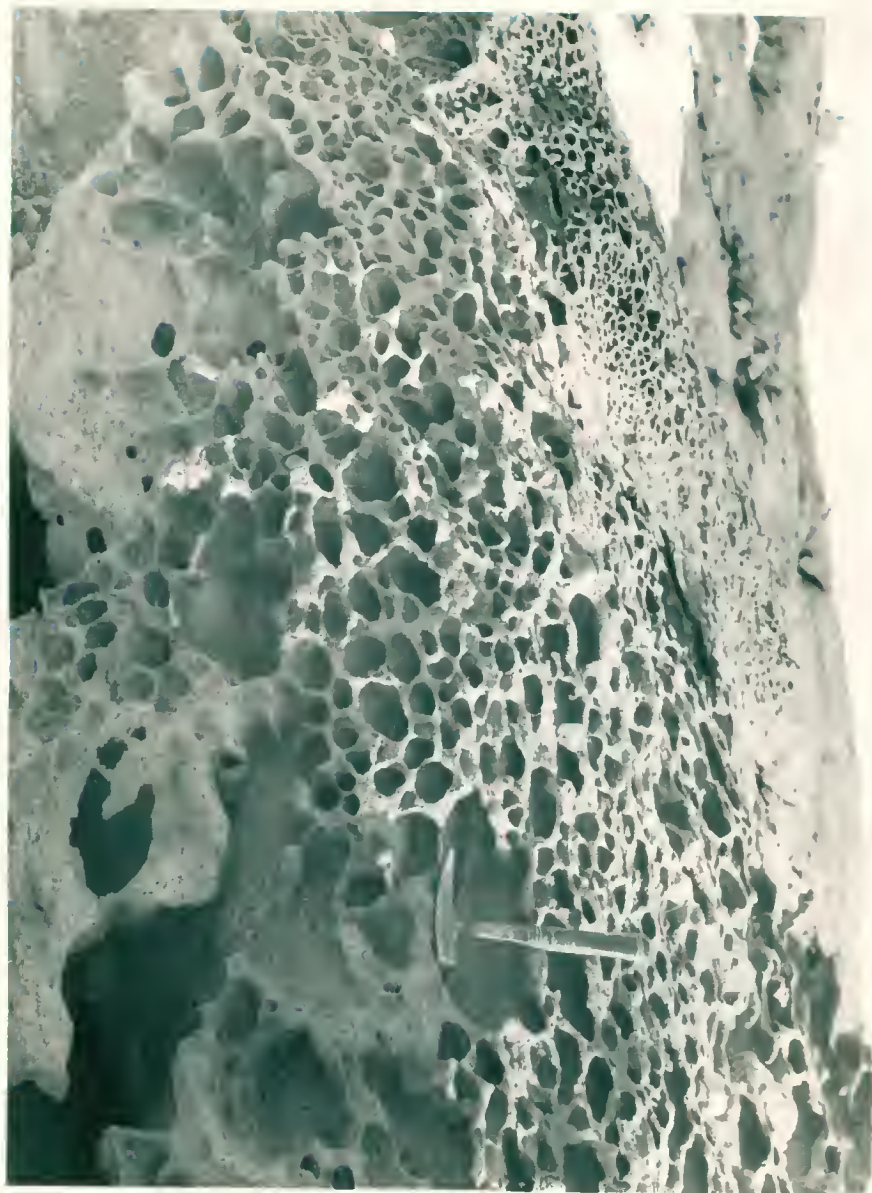
* SPEC 20

D. Vardos

Spec of peg = horn? * SPEC 21.

Granite is cut by peg veins.
- mainly quartz

Honeycomb weathering



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Fyre Hills

12/1/76

1. Hylocichia rock S. 339-51 = 288
-generally D 685
dark (black)

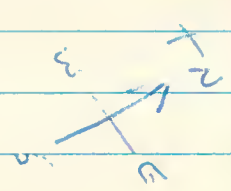
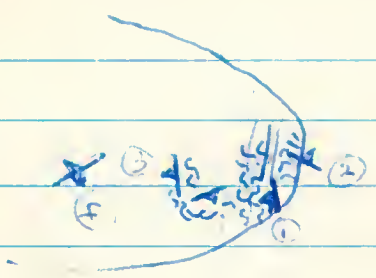
aphanitic texture Contains

laminated foliages commonly

4 cm length. Deformed
bands of peg - pink & white
feld. q & biot & musc.

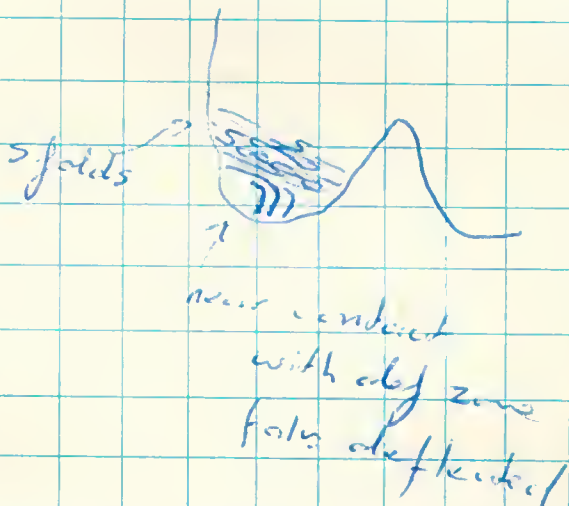
One near scale 'S' fold
seen. Peg rock intrudes
during formation of this
deformed zone. Zone
may be about 80m wide
& includes blocks of
retained country rock.

2. F. red gneiss gnt- S 220 51 = 229
q. f. gneiss. D 87w
Foliation due
to q elong. & gnt strings



* SPEC 22 - myl. peg

* SPEC 23 - gnt grains



Some of the peg - g veins have
borders of muscovite 7 cm across

* SPEC 24 - small 'S' fold
of g - f lens in black
ephrinitic matrix.
Strong lineation // to axial
plane of fold.
- small axes of garnet.

(3)



Myl

S. $330 - 51 = 279$

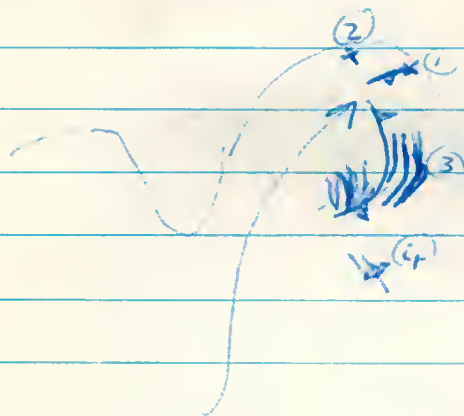
D. 708

Myl

S. $232 - 51 = 181$

D. 60E

L. $50 - 203 - 51$
stkg = 152



rubble - can't follow strike.
May be large S fold of
mylonite (macro scale).

(4)

Fine gr. gnt. gneiss

S. $276 - 51 = 225$

- in places gnt
clusters to 1 cm.

D. very

Includes larger $\frac{1}{2}$ m wide
of gnt biot gneiss

* SPEC 25

gnt gne

*

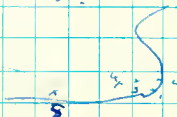
26

biot gneiss

Don't know what angle def zone
doing

show

X 522



⑤ Strongly foliated S 336-51-283
gnt. gneiss D. 705
* SPEC 27 Prg L= 20 → 328-51
stky = 277

Between pt 4 & 5 Zones
of myl. rocks.

At pt 5 - Interbeds (1-2 m)
of fol gnt gneiss and black
epheritic granular myl.
rock. Lenses of def
hornblende ? gneiss.
* SPEC 28.

Isoclinal - open folds
- handspec 5122

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M/2036



M/2036

Malachite staining on fracture
surface of ^{mylonitic} gneiss.

Phy: 64 $\rightarrow$ 180-51
= 129
Isoclinal fold
hand spec fold $\uparrow$

mylonite $\downarrow$



gn + gneiss $\uparrow$

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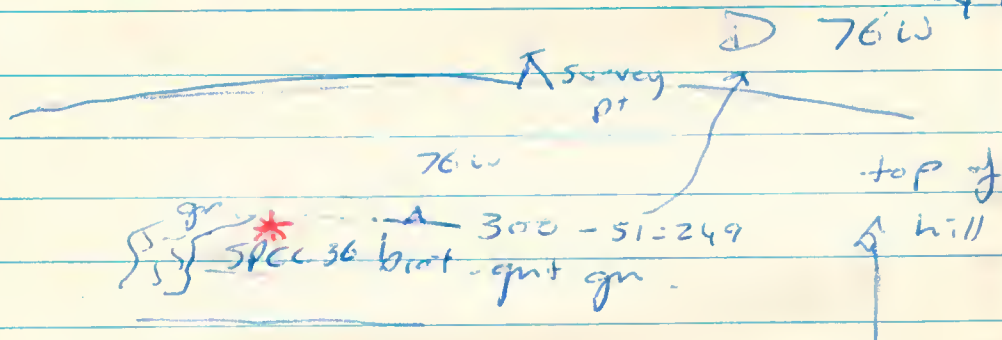
⑥ Base of hill to survey pt.

Base of hill - scree

* SPEC 29 - f. gnt - mag - gntz

* SPEC 30 - mag biot gnt gneiss
- also scree of Fx

* from SPEC 31 local S. 300-51
= 249
D 76W



1m { black

* SPEC 35 - biot - gn - g.f.

~1m { white

* SPEC 34 - gn - g.f.

yellow - flaggy * SPEC 33
(b) g - f. gnt

rubble } * SPEC 32 b. g. f. gn.

~~○~~ SPEC 31
- gnt - amphib?

SPEC 31 - intrusive? pool into
gneiss. First thought mafic
min. clinite - however bladed
appearance - an amphibole (px?)
(looks v. much like clinzoisite)



pod →

M/2036

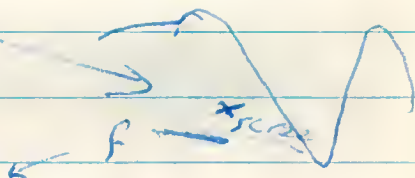
(7)

* SPEC 37 Pyroxenite?

- pool near NW station.

- 2-3 m x 2 m

(8) Mesoscale Phg. fold 50 → 085-51
folds
in b. gn. ≈ 034

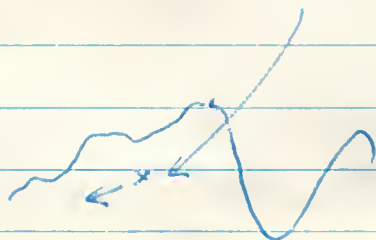


peg with mylonite
at margins of the dyke

Ast 227

Fold S 278-51

D 85SE



Speckled cream-grey gneiss
- f. quartz b. quartz 2-f. quartz
Includes thin (1-2 cm)
layer of the mafic rock
(see SPEC 31 & 37.)

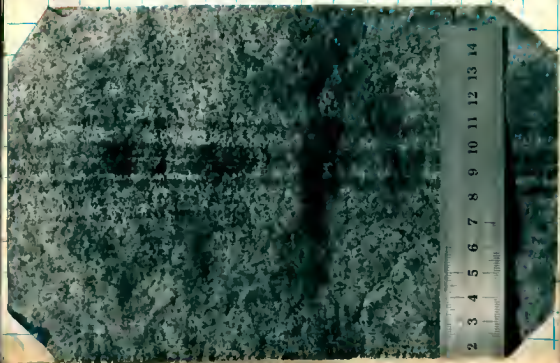
Several metres to NW
cream coloured (b-) gneiss
containing layers of the
mafic material - also
minor number of augen
of mafic mineral
* SPEC 38



M/2036



M/
2036



⑨ Cream coloured

^{gnt green}
Contains layer 2 cm wide
of yellow brown f. gnt
material containing garnet
spots. Each side of this
layer a layer 1-2 cm
wide rich in garnet

* SPEC 39

About 4 m further
layer - 15 cm wide
of gnt-mag-gntz rock

* SPEC 40

New cliff edge * SPEC 41
- foliated dull black
rock containing biot
- deformed maf. - band?

In this area - mafic pod



M/2036

Cont rich & gnt poor layers.

malachite in
↓ fracture



M/2036

Same area as SPEC 41 &
last two photos taken.

On fol. surface of gneiss
- scabby yellow & light
green material -
probably limonite * SPEC

However in this area

(see photo) as a fracture
malachite staining was
present

* SPEC 43 b-gr gneiss

* SPEC 44 Red of y/m - alt. products

(10)

* SPEC 45 Fairly massive gneiss

(11)

* 46 - malachite in frac common

* SPEC 46A - massive mafic rock

* B - siliceous mafic rock

* SPEC 47 Gabbroic rock. - mal gneiss

Spec 46, 47

- appears to
be fold nose
- symform
of the pod.

Western end of map fed

Phy 50 → 102 - 51

fold = 51

axial plane
defined by min
clings

*

Spec 48

Grasall

- collected by A.

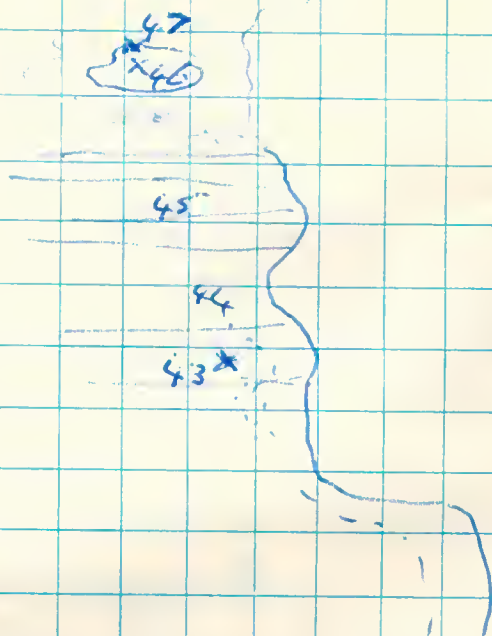
Spec 48

M/2036

tent

mafic





Nth of Obsew Is. 14/1/78

- first stop on rubble mountain

- mafic g f grain S N-S

- mafic D. dips W

see also

General trend J.

1st Riiser Larsen/12/345
Sheelagh Island 15/1/75

Dark grey uniform (bet.)
- g. f. grains. Quartz?
bluish in colour. Med
grained.

Includes layers

- semi-conf to
fels - up to
3m wide

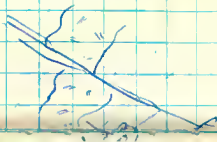
of mafic
material

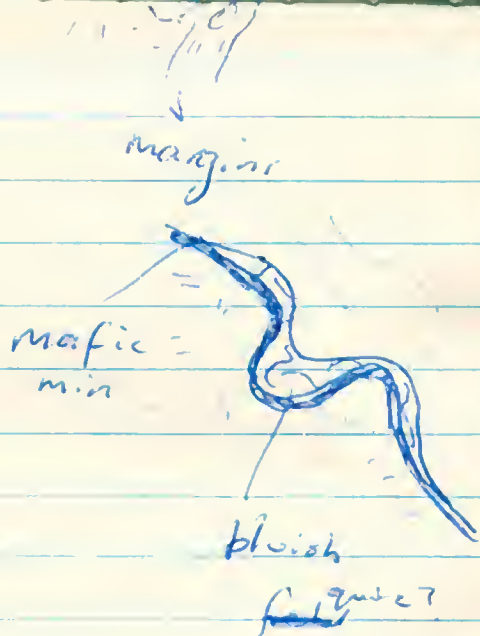
Cut by
~ NW-SE

trending

Shear zones

- few cm of
dark black
f. g. fluid type rock
- mafic





2 Joints Sets

S: $307 - 51 = 256$

D: $83 N$

S: $248 - 51 = 197$

D: $vert$

General fol-

S: $311 - 51 = 260$

D: $31 SW$

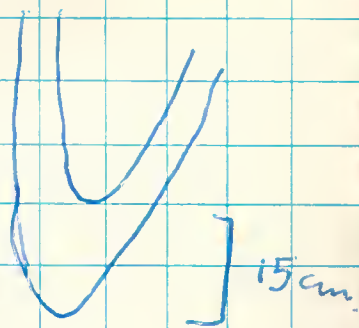
Z folded in pegn layer
(grey f - blue qtz)

Phy Lin: $30 \rightarrow 228 - 51 = 177$
(compnd stky)

Near survey mark appears
to be fold in a thin layer
of slightly finer grained
lighter grey greens.
Other layers of
this green.

- ~ 15 cm wide

- conformable with
general fol.



* SPEC 49 - host green

* SPEC 50 - layer of finer grained
greens

* SPEC 51 - mafic rock

* SPEC 52 - part of blue
quartz? vein which
is commonly assoc
with margin of mafic
layers

Island ~ 20 m high.
Mammie in outcrop.

Another foli.
measurement

S 291 - 51 = 240

D 355



M/2037



M/2037

111 Cod/Proc Is/7/2830 (B & W 1976)
Latham Peak 18/1/78

- 1) Rubble of b & f greis and
some amphibolite (± ps)
Toward pt (2), - boundary
anticrop of g-f greis &
then zone ~ 7 m wide of
basalt rubble contains
position of dyke

* SPEC 53.

At margin the g-f greis
is veined by mafic material
and the feld is heavily
altered to clay. Some epidote

* SPEC 54.

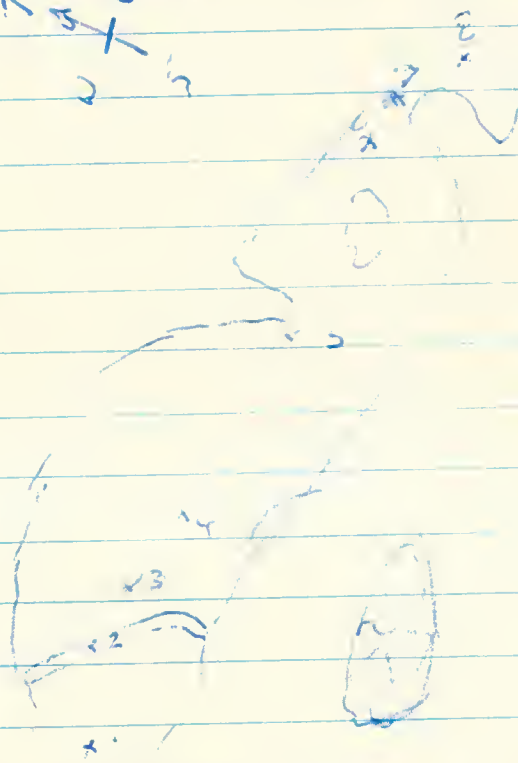
Trend of dyke 200 - 52 = 148

- 3) Boundary anticrop of gabbro, dyke

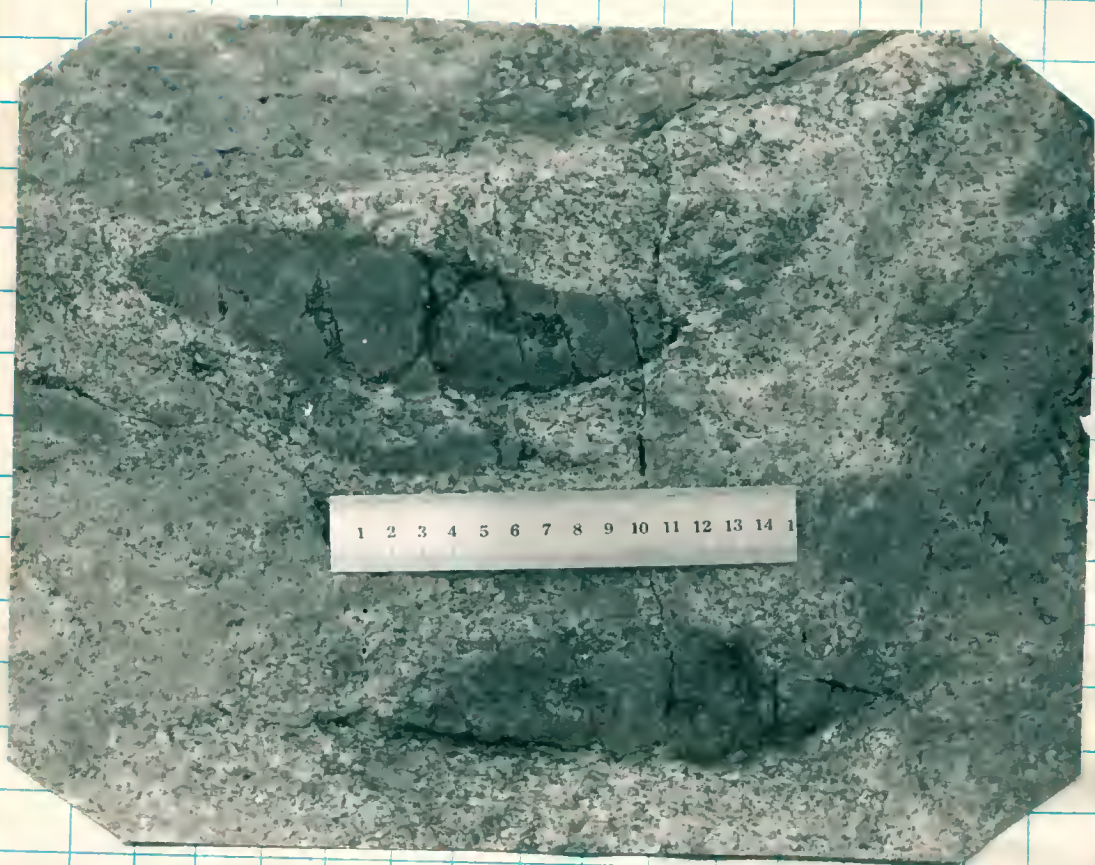
* SPEC 55

in lower center of mag. rock
 dist. of green Also rubble
 of gabbro (metre?). Mag injected
 into country rock around
 gabbro plug?

* SPEC 56 Mag. rock
 * 57 Gabbro
 TN 5 6
 2 3



5) Boulder (b) - q. f. green
containing lenses of hypersthene?
One large pod ~ 30 cm x 15 cm
- pale green pr (chlorite?)



[M/2037]

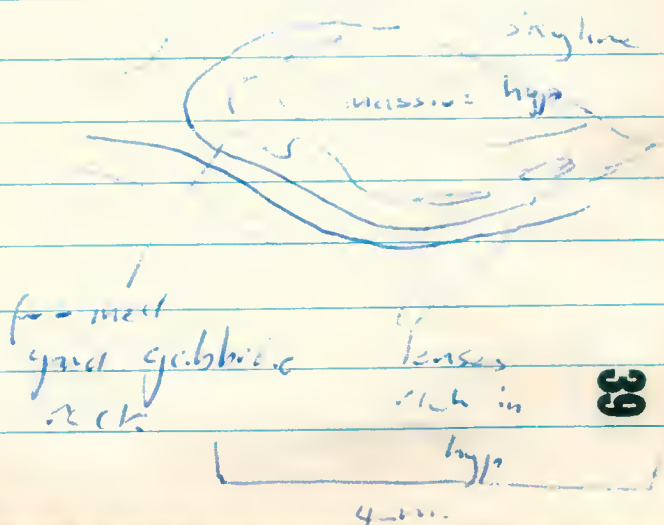
* spec 58 rocks in green
 * 59 - pale green m.s.

These mafic pods have no
 apparent feeder

20 m further up hill - blocks
 of 50's 58 rock type - fol-
 trending ~ 248 - 52 = 196
 dip steep. These blocks
 probe in place.

6 Edge of ridge - grey-yellow
 mottled g. of greens
 foot 4 m. long (photo)

* spec 60





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Near pit ^{in light} *SPEC 61 - light
green mineral in this mafic
pod - similar to SPEC 48
this pod (61) also contains some
30 m along ridge. Difficult
to see what job is doing.

'cleaved' *SPEC 62 rock.
- contains more of light
green bladed "amphibol?"
Probably also a pod. Does
appear to be continuous
in the series.

7. Greenish green Quartz blue

*SPEC 63.

2. $1\frac{1}{2}$ m wide basalt dyke
More resistant to erosion
& with foliated green (cleaved
|| to dyke) form tongue
extending out from ridge.

Trend of dyke. $265 - 52 = 313$

- dip wt *SPEC 64.

to m up along ridge - find
rich in p. ~ 1 m long

* SPEC 65 - black - Inyr.

* 66 claps - bright
light green

Clas Ptg

$$S \quad 255-52$$

$$\times 203$$

$$D. \quad 71E$$

$$Ply L = 18 \rightarrow 241-52$$

$$(comp. \& \text{ mineral change}) \approx 189$$

may be foliated / sandy

White gnt

becoming g f
green.

Fels.?

$$S: 170-52=118$$

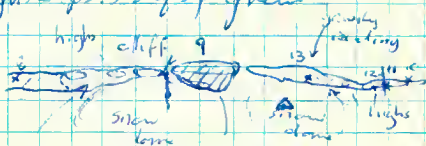
$$D. \quad 200$$

Have a feeling whole outcrop
is folded to bedding - the
folds (if not imaginative) is
covered by compound layering

20 m up ridge

* SPEC 67 - Act - coarse gr'd
gn - ps(?) - y - f green

TN
X
1



plateau
- peak at
SE end.

Trench

184 - 52
Vert = 132

Fol. n? - Rifting

S 25.2 - 52
D 83 NE

9. Basalt dyke

7m across,
Margin ~~gneiss~~ - fractures
& epidote.

* SPEC 68.

19/1/76

10

Other end of ridge - grey
(gn) - y - f gneiss. Gritz
grains to 2 mm. Close
packing foliation caused
by slight elongation of grains

Fels

S: 264-52=212

D. 0.3E

1 hr dip & strike taken on
E side of ridge. Near
top of ridge dip ~ vert. Dip
to E may be due to
slumping.

11) Trench 262-52=210 of basaltic
dyke - thin < 1 m.?
into white garnet & f. gneiss.

12 Gnt. & f. gneiss. Gnt commonly
up to 15 mm. * SPEC 69.

Fels

13 (revisiting recording
taken here

S. 252-52

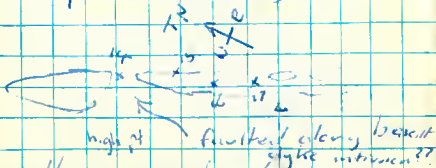
D. vert ²⁰⁰

- recording reference mark (in mapping)
Abent best seen exposure
showing fol.

Fels defined by gnt - 'biot' ?
layers & sep. & f. layers

The general high of the peak
 - backbone of ridge is mainly
 composed of gnt gneiss -
 commonly the white gnt gneiss.

Because of the lack of mtn
 in the country rock fold is
 difficult to see and the basic
 lenses ~~are~~ often vary in
 orientation from locality to
 locality - could be a
 lot of folding going on but
 can't see any except
 in places between basic
 lenses and country rock
 (see p 39 sketch.)



14 To north grey gnt of gneiss
 (patches of white gnt of
 gneiss) - various rocks

of same rock. off pt 14

* SPEC 70 black amphibolite

Shoreline rock containing
feldspar. Also in the area.
Some of gnt-biot - g-f green
Trend of shoreline rock

$$226 - 52 = 224$$

Zone is ~ 6 m wide -
part of series is thin, brittle
deformed rock. On south
side - weak gnt green

15. Gnt-apa? - g-f green. Grey

* SPEC 71

16. (White gnt green)

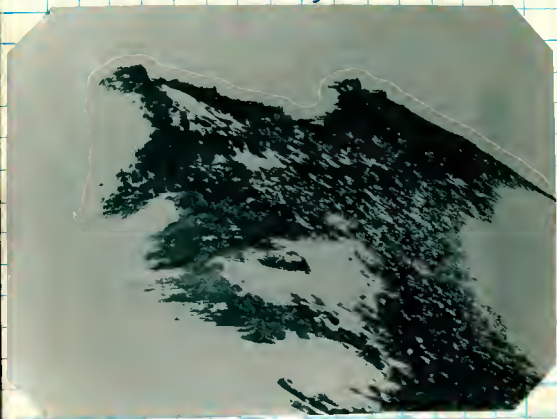
* SPEC 72 - Shows

the grey streaks in the green
- det muscovite grains

17. Major pool several in diameter.
(not entirely exposed).

Outer zone appears to be made **3**
up of f gnt cpx - plagi (dark & some
bright light green, etc)

- then "sapphires - glaucophane?" rim
around cores of coarse grained
hypersthene - plagioclase.
Pocket with black garnet (up to
1 cm across) - plagioclase.

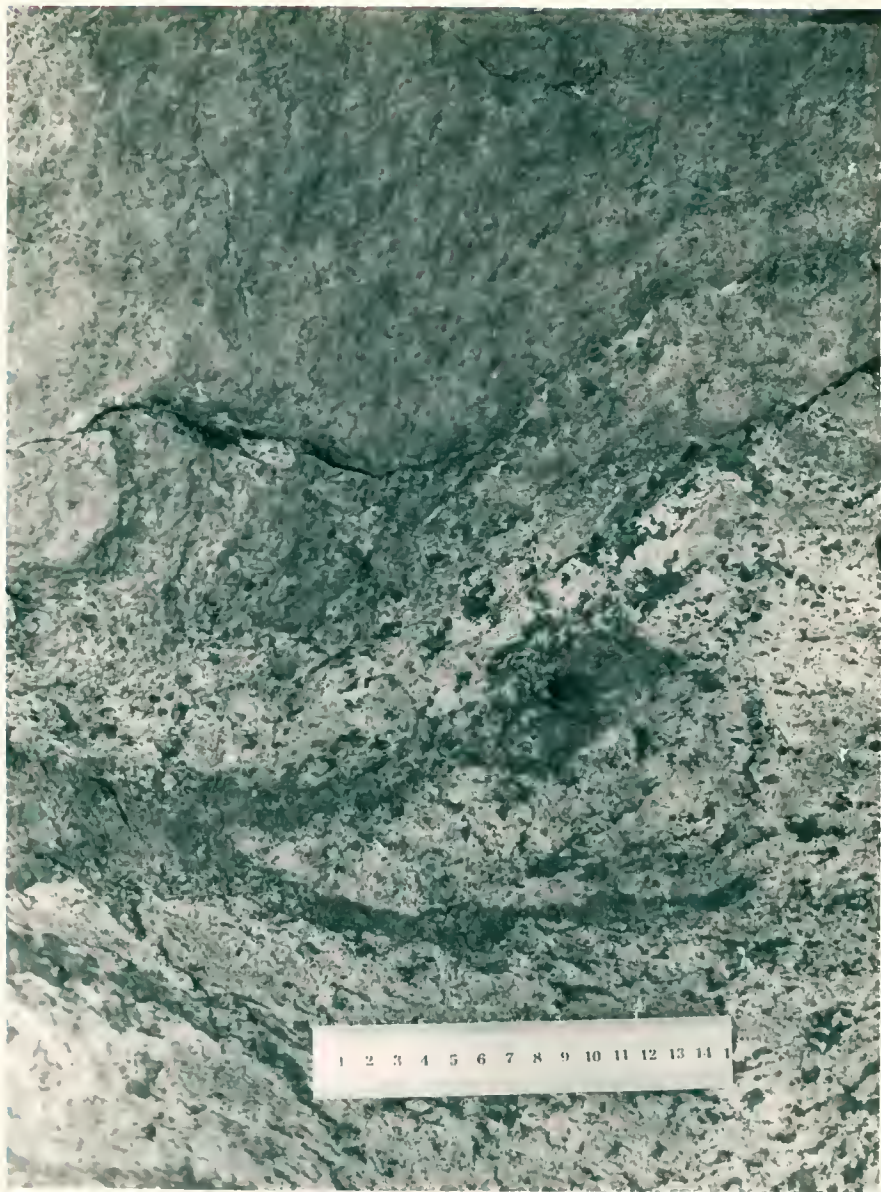


Ridge, Nevada - 258-52 + 706

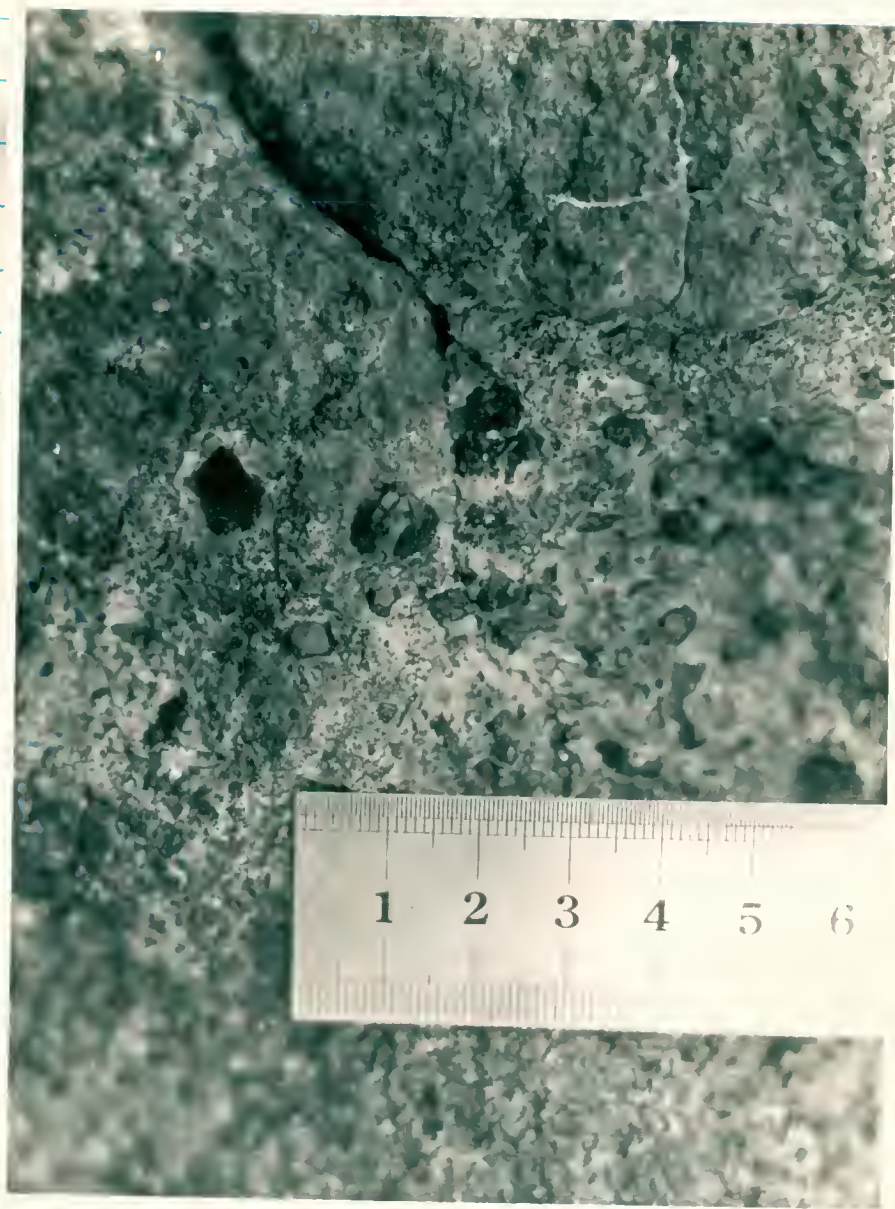
M/2037
also GB/1041



also GB/1049



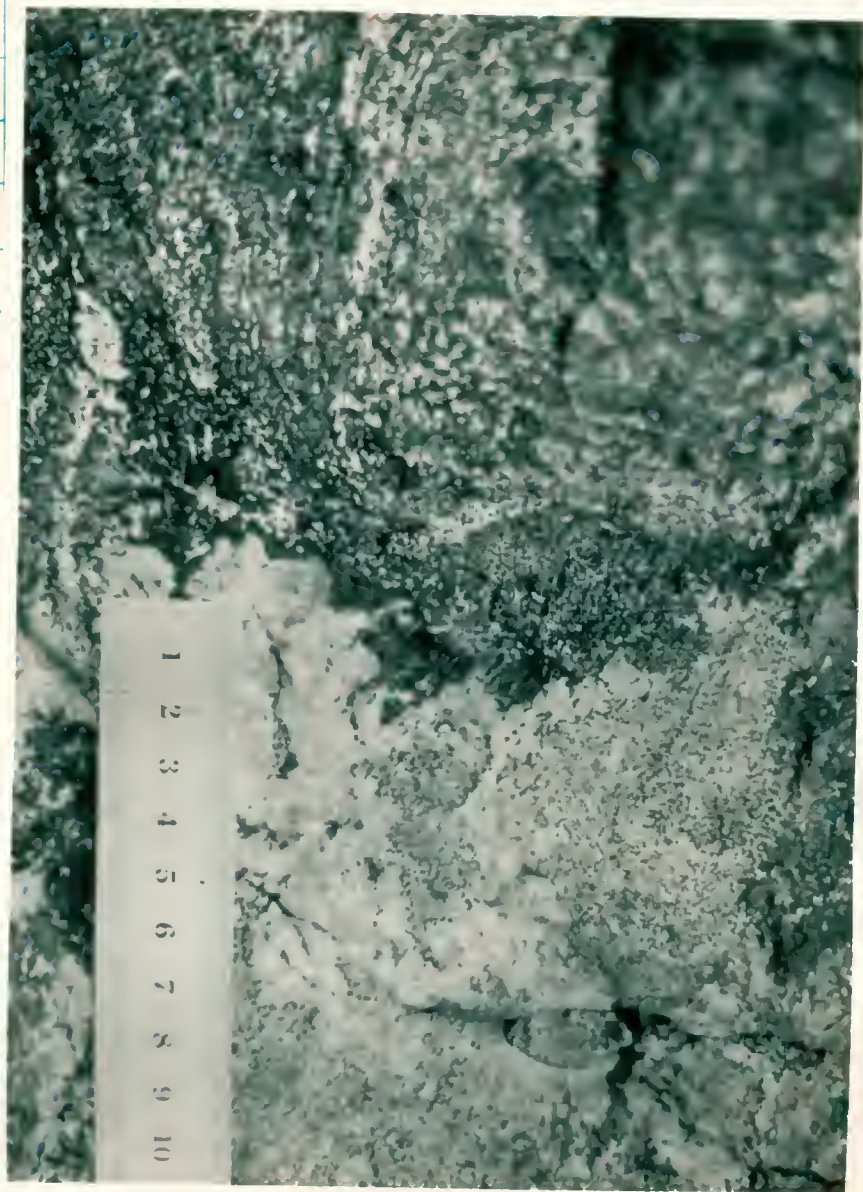
M/2037



M/2037

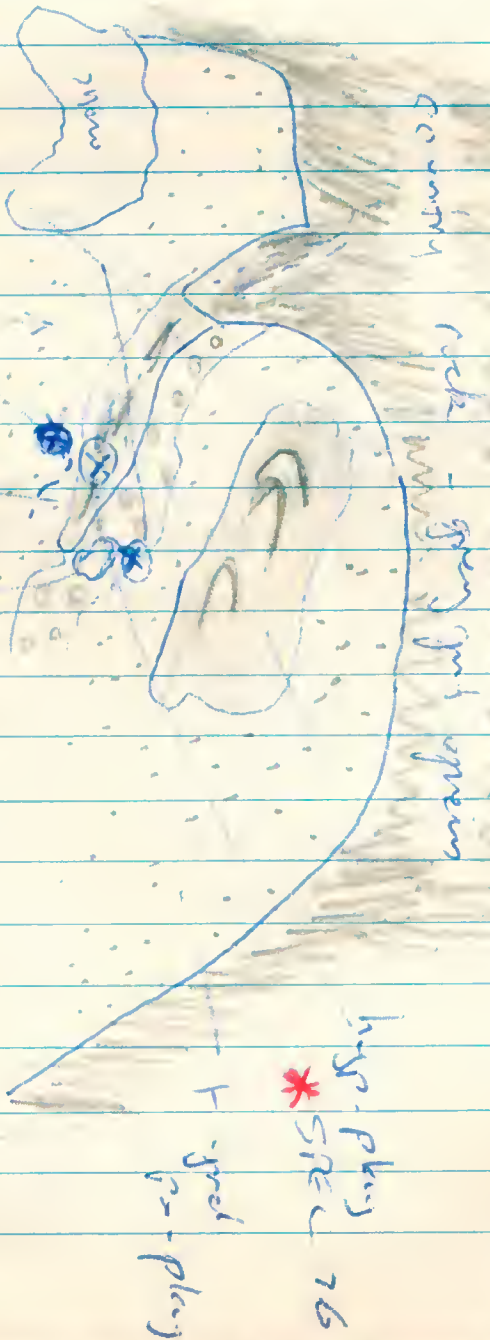
1-
2-
3-
4-
5-
6-
7-
8-
9-
10-

GB/1040



Sketches
(very sketchy)

South face



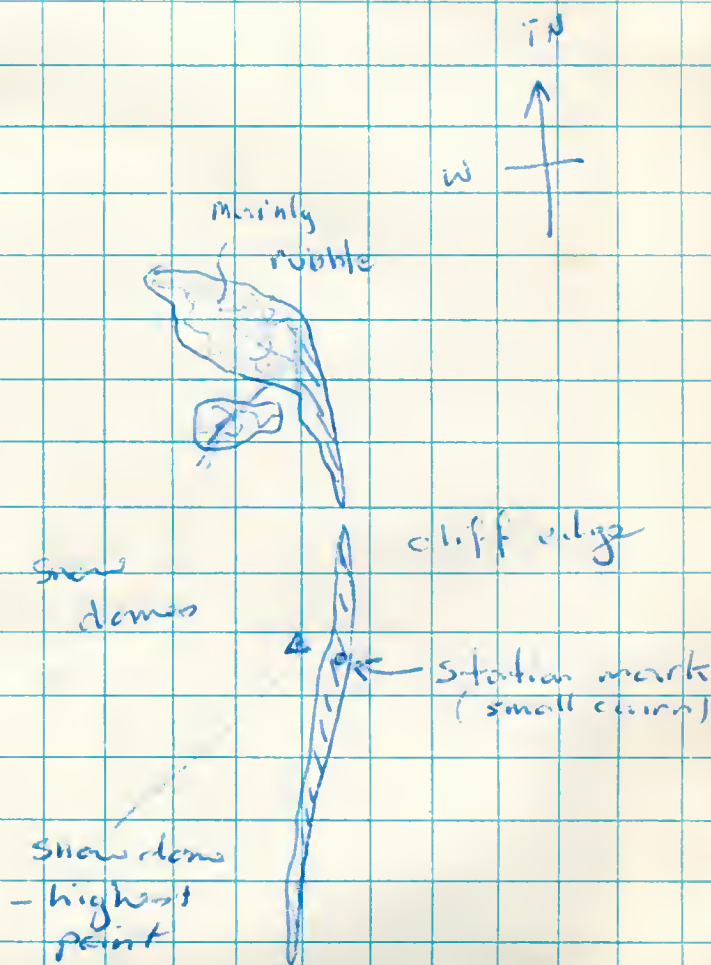
Sulphurine
-philes
* spec 75
T - good px-play
* (X) spec 73

part of play
with black grts
* spec 74
layers of hyp (beetish
in play)

hyp. play
* spec 76

T - good
px-play

LATHAM PEAK



THOSE FROM 2/1871 (Bew 1976)

Pinn Island ~13/1/76

- collected from scree by
Carl MacMaster (Nat. Plap)
& Peter Hill (Geophys)

Scree is derived from outcrop.

* SPEC 77 - (b) - g-f-green

* 78 - fld. px (black) rock

* 79 - fld px (bright green
& black px) rock

* 80 - basalt

The basic rocks (78 & 79)
are probably derived from
the basic pods with
country rock SPEC 77.
SPEC 80 may be derived
from dyke.

7628 3179 → XRD on bright green px
(D. Barnes, BMR 1976 pers com)
- probably augite.

NYE MTS / 11 / 165 B2W (1976)

Kroon Ntk

1049)

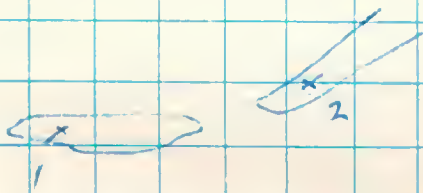
25/1/76

1. End of ntk biot-grt px-plag
gneiss Same min. layering
very Green & black px present
* SPEC 81

Med-grd mafic gneiss [Plag, 55%, Hsp + Cpx, 25%, green blk]
(15%, biotite 5%, opa, grt + c
- secondary growth of ~~high~~ ~~pyroxene~~
Thin con. veins of px-grt-f pyroxene.
* SPEC 82

2. F-med grd px granitic cutting
grt-biot-px gneiss
* SPEC 83 of granite

Field S 33.0-52
of gran D 875 = 278



(low jointing)
S. 235-52=183
D cut

The px in the granite is in aggregates.

Further up hill 3 m wide layer of g f granite.

Fels // to basic gneiss.

However margin consists of alt layers of basic & granitic rock & lenses of basic rock in the granitic rock. In main layer no px in the gr.

Then back into basic gneiss. 20 m further up hill another granite layer almost // to fels (seen in basic gneiss)

- 15 m wide - includes lenses of basic gneiss. Some coarser granite lenses within the fine grained granite.

* SPEC 84



M/2037



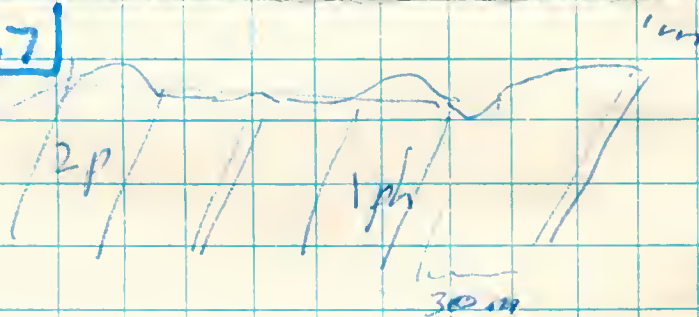
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49

Photo of next large layer of
granite shows folded microlite
in basic mass



M/2037



sent	3	2	5	15
	a	b	a	b

The granite layers form outstanding
blocky ridges. The gneiss is
subdued in relief.

At the margins of contact
granite commonly contains
biotite

$$\text{Fed} = S \ 306 - 52$$

$$= 254$$

$$D: 90$$

Measured on banded gneiss

$$S: 307 - 52$$

$$= 255$$

$$D: 855$$

$$L: 43 \rightarrow$$

$$144 - 52 = 92$$

(min elong)

3. Two photos showing lensing
out and truncation of
gneiss foliation in the banded
gneiss. In this area there
is layering of gneiss & granite
on the scale of a few cm. **50**



M/2037



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Near to top of ridge - in basic
rock - fracture filled with
malachite. Only one small
bit seen.

Layered gneiss & granite?

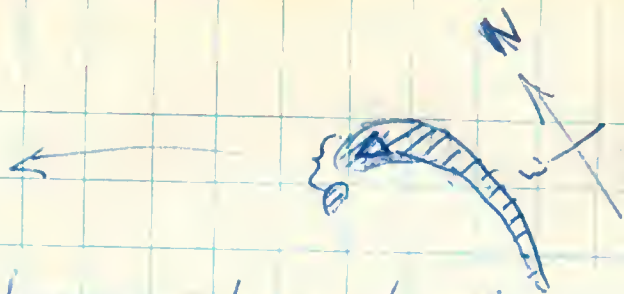
* SPEC 85.

This spec appears to contain
p & q - certain amount of
mineral segregation.

Part of late peg phase - b-g -
f prob. related to granite.

Essentially in whole of
this outcrop (the whole ntk)
consists of basic gneiss
intruded generally conformably,
by g-f gneiss (minor
bit). The granite may
be foliated - there are
peg veins in the gr which
parallel fol- & prob grains in
the granite are elongate // to
an 11-min boundary i.e. the

P



Layers of granite intruding
mafic gneiss

* SPEC 86 - granite

* 87 - yellow staining
& ppt on granite surface
(local occurrence)

* 88 - barite core

* 89 - q-f. surrounding the
barite core

Look crosscutting peg phase
(crosscuts barite & acid rxn)
q-f-b also contains magnetite.



M/2037



M/2037



M/2037



[M/2037]

JMR-1 Doppler Survey Set.

The JMR-1 Doppler Survey Set is a portable receiving and data recording system which receives Navy Navigation Satellite System (NNSS) transmissions and records orbit and doppler information for later processing in a digital computer. The set will automatically record adequate data for a precision survey in one or two days of unattended operation.

Major features of the JMR.

- 1) Data recorded by the JMR-1, can be processed to establish the geodetic long, lat and elevation of the position without requiring a reference to any other point on the Earth's surface.

2) Pos: accuracy is essentially unaffected by geographic location, weather or time of day or night.

3) Ownership & operating costs are $\ll$ any other first-order survey techniques; $\ll$ all other techniques for distances of 100 km or more from a control point.

4) For more precise measurements relative to a known marker, a JMR set can be located up to 1,000 km from a second set at the nearest survey control with no radio or visual contact required. This technique is known as "Translocation".

Cost of instrument \$35,000
Also have to pay for computer
programme - somewhere
around 4-\$8,000

JMR uses U.S. Navy Navigation
Satellites as its only reference
in determining the precise
3 D position of a point on
the Earth's surface. Used
for over 10 years. Five
operational satellites are now
in polar 600 n mile circular
orbits. Some now in operation
for over 6 years. The track
of the satellite in its orbit
must be precisely known as
its the surveyors position
reference. The data which
describes the satellite position
as of each two minutes into
the future is predicted by
the U.S. Navy and stored
in the satellite's memory. The

satellite is programmed to transmit this data as modulations on its carrier frequencies in the appropriate time slots for reception by user's equipment. The actual data is correlated with satellite-transmitted time marks.

The JMR receives two coherently-related satellite-transmitted signals, at frequencies of $\sim 150 \text{ MHz}$ & 400 MHz and extracts and records timing information, predicted satellite ephemeris, and doppler shift data.

One cassette has the capacity for ~ 50 pages Nat Mapping - about 20 pages for accuracy of couple of metres.

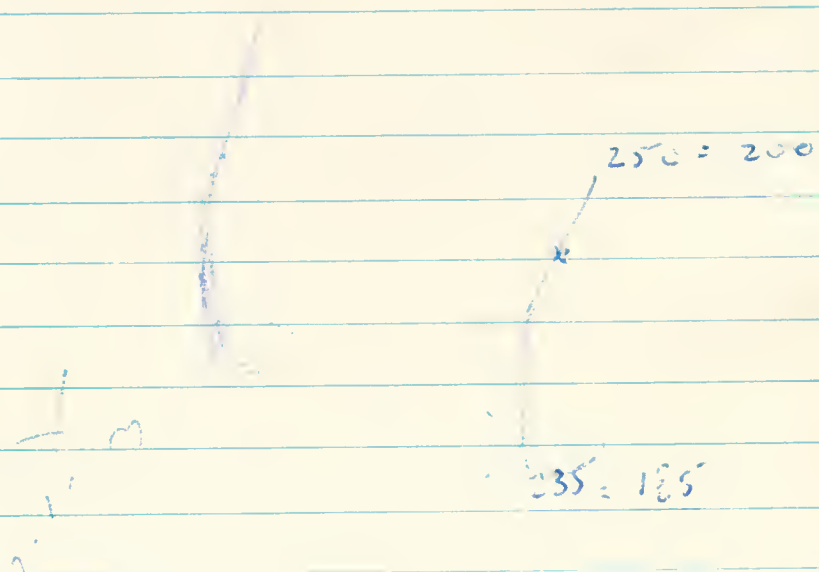
Using satellites that get
above 15° from horizon.
Can use satellites that
are $< 15^\circ$ but fix less
accurate.

10th coll.

(finished 1st ben)

penz

white out Lantham Peak



Film ?

-

-

Mt King camp

photo Pythag pk

" " "

Auster Gl. (Ton Is) -- pol
" " unpol

Mt Orr

Mt Chris

Thyer Glac

Thy Glac

Ragner

9th roll

Russians

Inside Mt Pardoe - ice
melting

Ressa Low

Shela Is

Roos

Film

To Mt Breckenridge

- photo of Erkins

- rock next to Mt Moinies

- photo of



Mt Bennett



Mt Brek

- photo (pol 28mm) of Moinies & Erkins

Erkins

1

Moinies

Edh

29th

Taylor Rookery

Rippon

Taylor Rookery

Rookery Is.

→
Mawson

30th

7th. Gilbert Glacier 6,000'
(polar)

(Shot yesterday of lake
just to east of Rookery)

2 shots of Ed 7th (ē pol)

View into) ~~Ed Rippon~~

Ed 7th

Plat

(Shot yesterday

Nov 10 1891 R. base

u

